Abstracts

C-Band 6-Bit GaAs Monolithic Phase Shifter (Dec. 1985 [T-MTT])

C. Andricos, I.J. Bahl and E.L. Griffin. "C-Band 6-Bit GaAs Monolithic Phase Shifter (Dec. 1985 [T-MTT])." 1985 Transactions on Microwave Theory and Techniques 33.12 (Dec. 1985 [T-MTT] (1985 Symposium Issue)): 1591-1596.

Design, fabrication, and performance of a 6-bit GaAs monolithic phase shifter for use in the 5-6-GHz frequency range are described. The chip includes an analog control bit (0-11°) for phase correction in a closed-loop configuration and five digitally controlled phase bits. A ±1° phase variation was achieved for the 11.25°, 22.5°, and 45° bits while for the 90° and 180° bits the phase variation was ±6° over 5 to 6 GHz. The return loss was better than 15 dB and insertion-loss flatness was within ±1 dB over this frequency band. The phase error over a temperature range of 25-80°C and the 5-6-GHz frequency band was less than ±0.5°, ±1°, ±1°, ±2°, and ±2° for the 11.25°, 22.5°, 45°, 90°, and 180° bits, respectively, with a maximum of .8-dB insertion-loss variation.

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